Program Announcement

NASA Undergraduate Student Research Program
(NASA-USRP)

Summer 2001
Fall 2001

Sponsored by the
National Aeronautics and Space Administration

http://education.nasa.gov/usrp

Application Deadline:
January 26, 2001

NASA UNDERGRADUATE STUDENT RESEARCH PROGRAM
(NASA-USRP)

Program Description

The National Aeronautics and Space Administration is sponsoring the *NASA Undergraduate Student Research Program* (NASA–USRP) offering undergraduates across the United States research experiences at NASA Centers during two sessions scheduled for Summer 2001 and Fall 2001. The purpose of the *NASA–USRP* is three-fold:

- To attract undergraduate students from the widest array of backgrounds, who are fully representative of America's racial, ethnic and cultural diversity and to provide them with hands-on, challenging research experiences that stimulate continued student interest in the fields/disciplines aligned with NASA's research and development mission.

- To build a national program bridge—from existing NASA K–12 Education Program activities to NASA Higher Education Program options—that encourages and facilitates student interest in future professional opportunities with NASA and its partner organizations. Such opportunities might include NASA career employment; temporary assignments; undergraduate and graduate co-op appointments; Space Grant scholarships and fellowships; or contractor positions.

- To extend and strengthen NASA's commitment to educational excellence and university research; and to highlight the critical need to increase the nation's undergraduate and graduate science, engineering, mathematics, and technology skill base.

The *NASA–USRP* seeks applications from undergraduates enrolled full-time in an accredited U.S. college or university. Applicants must be rising juniors or seniors at the completion of the Spring 2001 semester/quarter. Eligible fields of study are academic major or demonstrated coursework concentration in engineering, mathematics, computer science or physical/life sciences.

During the pilot year of this new NASA initiative, NASA expects up to 100 students will be selected based on competitive evaluation of their application package. The *NASA–USRP* will consist of a 10–15 week research experience at a participating NASA Center under the supervision of a NASA technical mentor. Selected students must be available to work 10 consecutive weeks at 40 hours per week during the Summer 2001 session (dates to be determined by Centers between late May 2001 and mid-August 2001) or 15 consecutive weeks at 40 hours per week during the Fall 2001 session (dates to be determined by Centers between mid-August 2001 and mid-December 2001).

Students will receive a $5,000 10-week summer session/$7,500 15-week fall session stipend for the research experience plus one round-trip airfare or ground transportation costs to and from the NASA Host Center. A housing allowance of $800 will be provided for students participating at Ames Research Center and Jet Propulsion Laboratory. At the completion of the research session, students must submit a paper on their *NASA–USRP* research experience. Students may also be asked to discuss their research in public forums and/or participate in NASA-sponsored colloquia, workshops, and technology demonstrations.

NASA Background

Nationwide NASA has nine Field Centers plus the contractor-operated Jet Propulsion Laboratory. NASA's overall program, as outlined in the agency's Strategic Plan (www.nasa.gov) is comprised of five Strategic Enterprises. Each enterprise covers a major area of the agency's research and development efforts.

Aerospace Technology—The mission of this Enterprise is to pioneer the identification, development, verification, transfer, application and commercialization of high-payoff aeronautics and space transportation technologies.

Biological and Physical Research—The mission of this Enterprise focuses on a wide spectrum of scientific research, including basic, applied, biological, physical, chemical and biomedical. This newly formed Enterprise was established to strengthen the agency's ability to meet the challenges brought about by the growth in areas such as molecular biology, nanotechnology, information technology and geonomics.

Earth Science—The mission of the Earth Science Enterprise is to use the unique vantage point of space to provide information about Earth's environment that is obtainable in no other way. In concert with research and industry partners, the Enterprise is developing the understanding needed to support the complex environmental policy and economic investment decisions that lie ahead.

Human Exploration and Development of Space—The mission of this Enterprise is to open the space frontier by exploring, using and enabling the development of space and to expand the human experience into the far reaches of space.

Space Science—The mission of the Space Science Enterprise is to solve mysteries of the universe, explore the solar system, discover planets around other stars, search for life beyond Earth from origins to destiny, chart the evolution of the universe and understand its galaxies, stars, planets, and life.

USRP Research Locations

Research and development programs, projects, and activities that support NASA's five enterprises are conducted at each of NASA's Field Centers and at the Jet Propulsion Laboratory. For the *NASA–USRP* pilot, students will have the opportunity to participate in research experiences at the following NASA facilities:

Summer 2001:

- Ames Research Center (ARC), Mountain View, California
- Glenn Research Center (GRC), Cleveland, Ohio
- Jet Propulsion Laboratory (JPL), Pasadena, California
- Kennedy Space Center (KSC), Florida
- Marshall Space Flight Center (MSFC), Huntsville, Alabama
- Stennis Space Center (SSC), Mississippi

Fall 2001:

- Goddard Space Flight Center (GSFC), Greenbelt, Maryland
- Johnson Space Center (JSC), Houston, Texas
- Langley Research Center (LaRC), Hampton, Virginia

Program Coordination and Management

NASA awarded a grant to the Virginia Space Grant Consortium (VSGC) of Hampton, Va. to coordinate the *NASA–USRP* pilot. The VSGC, which is part of NASA's National Space Grant College and Fellowship Program, will implement the pilot program in concert with NASA Center Coordinators and under the direction of the Office of Human Resources and Education at NASA Headquarters.

Eligibility

NASA is seeking participation from students who represent America's rich and diverse population. Female and male students of all races, creeds, colors, national origins, ages and disabilities are encouraged to apply. Applicants must meet the following eligibility requirements to participate in the *NASA–USRP* pilot:

- U.S. Citizenship
- Classified as a Junior or Senior after Spring 2001 semester/quarter
- Enrolled full-time in an accredited U.S. college or university *(community college students may apply, however placement is contingent on matriculation into a four-year institution as a rising Junior)*
- Academic major or demonstrated coursework concentration in engineering, mathematics, computer science or physical/life sciences
- Demonstrated strong interest/commitment to one of the above career fields or disciplines (e.g., science/math/engineering fairs, clubs or awards; tutoring/mentoring; internships or other related experience)
- Minimum cumulative grade point average of 3.0 on a scale of 4.0

The following matrix indicates the primary student academic disciplines each NASA facility is seeking. Specific research positions are currently being identified based on this disciplines matrix. Students selected for *NASA–USRP* will receive an offer letter specifying the actual research position and the corresponding NASA mentor.

ENGINEERING	ARC	GRC	GSFC	JPL	JSC	KSC	LaRC	MSFC	SSC
Aerospace/Aeronautical/Astronautical	X	X	X	X	X	X	X	X	X
Chemical	X	X					X		
Civil/Environmental Health		X				X	X	X	X
Electrical/Electronic/Computer	X	X	X	X	X	X	X	X	X
Engineering Physics	X	X	X	X		X	X		
Industrial/Manufacturing		X				X	X	X	X
Materials/Metallurgical	X	X	X			X	X	X	
Mechanical/Engineering Mechanics	X	X	X	X	X	X	X	X	X
Nuclear		X							

PHYSICAL SCIENCES	ARC	GRC	GSFC	JPL	JSC	KSC	LaRC	MSFC	SSC
Astronomy/Astrophysics	X		X	X				X	
Chemistry	X	X	X	X		X	X	X	
Optics	X	X	X	X			X	X	
Physics	X	X	X	X		X	X	X	

EARTH/ATMOSPHERIC/OCEAN SCIENCES	ARC	GRC	GSFC	JPL	JSC	KSC	LaRC	MSFC	SSC
Atmospheric Sciences	X		X	X		X	X	X	
Geography			X						X
Geosciences			X	X					X
Natural Resource Management						X			X
Oceanography			X	X					X

MATHEMATICS/COMPUTER SCIENCE	ARC	GRC	GSFC	JPL	JSC	KSC	LaRC	MSFC	SSC
Mathematics/Applied Mathematics		X	X	X		X	X		
Computer Science		X	X	X		X	X	X	X

BIOLOGICAL SCIENCES	ARC	GRC	GSFC	JPL	JSC	KSC	LaRC	MSFC	SSC
Astrobiology	X		X	X					
Biology	X		X	X		X	X	X	X
Biochemistry/Biophysics	X			X		X	X	X	X
Microbiology/Bacteriology	X			X	X		X	X	

Deadline

To be considered, the *NASA–USRP* application package and requisite copies (original, plus four copies) must be **received** at the Virginia Space Grant Consortium office no later than 5:00 PM EST on **January 26, 2001**. Electronic and facsimile submissions will not be accepted, with the exception of faxed faculty recommendations. Application packages will be screened for eligibility by the VSGC and forwarded to NASA Center Coordinators for review. Students will be notified of their selection status in early April 2001.

Inquiries

The Virginia Space Grant Consortium coordinates the *NASA Undergraduate Student Research Program* for NASA at the national level.

Mail all applications to:

Virginia Space Grant Consortium
Old Dominion University Peninsula Center
2713-D Magruder Boulevard
Hampton, VA 23666

Direct all inquiries to:

Heidi B. Davis
E-Mail: hbdavis@odu.edu
Office: (757) 865-0726
FAX: (757) 865-7965

The *NASA Undergraduate Student Research Program* is sponsored by the NASA Headquarters Education Division, Office of Human Resources and Education, and is managed for NASA by:

James J. Gorman, Jr.
USRP Program Manager
NASA Headquarters

NASA UNDERGRADUATE STUDENT RESEARCH PROGRAM (NASA-USRP)

Application Instructions

General

The National Aeronautics and Space Administration is sponsoring the *NASA Undergraduate Student Research Program* (NASA–USRP) offering undergraduates across the United States mentored research experiences at nine participating NASA Centers. Two sessions will be offered—10-weeks during Summer 2001 and 15-weeks during Fall 2001. Applicants may indicate interest in up to a total of three participating NASA Centers. Selected Student Researchers may participate in only one session during 2001. Notification letters will be mailed to all applicants in early April 2001.

Submission Requirements

To be considered, applicants must submit an original application package, plus four (4) photocopied sets of the entire application package. *Electronic and facsimile submissions will not be accepted*, with the exception of faxed faculty recommendations. To facilitate review, the original application package and requisite photocopies must each be stapled and submitted on plain, white paper only. The application package and photocopies must be assembled in the following order:

- *Applicant Information*—Sections I–V.
- *Student Data*— In an effort to determine the degree of applicant diversity, NASA is asking applicants to voluntarily complete and submit the Student Data sheet. The Student Data sheet will not be used for selection purposes.
- *Resumé*—The student's resumé should include education, including relevant coursework; previous work or internship experience; significant accomplishments; and any other relevant information.
- *Transcript*—An unofficial transcript indicating grades through Fall 2000 is required. Include transcripts from each college or university attended.
- *Faculty Recommendations*—Two faculty recommendations are required using the attached Faculty Recommendations (I & II). While it is preferred that the recommendations be included in the original application package and requisite copies, a faculty member may submit it by fax or mail. All recommendations must be received by the application deadline, January 26, 2001.

Mail all applications to:

Virginia Space Grant Consortium
Old Dominion University Peninsula Center
2713-D Magruder Boulevard
Hampton, VA 23666

Direct all inquiries to:

Heidi B. Davis
E-Mail: hbdavis@odu.edu
Office: (757) 865-0726
FAX: (757) 865-7965

ALL APPLICATIONS MUST BE RECEIVED BY 5:00 PM EST

JANUARY 26, 2001

NASA UNDERGRADUATE STUDENT RESEARCH PROGRAM (NASA-USRP)

Applicant Information

I. GENERAL DATA

Name: _____ _____ _____
First MI Last

Social Security Number: _____-_____-_____ E-Mail: _____

Current Address: *(valid until _____)*

_____
address

_____ _____ _____ _____
city state zip code telephone

Permanent Address: _____
address

_____ _____ _____ _____
city state zip code telephone

Current Academic Level: ☐ College/University
☐ Community College *(will transfer to _____)*

Institution: _____ City/State: _____

Status as of June 2001: ☐ Junior ☐ Senior Cumulative GPA: _____ / _____

Major(s): _____ Minor(s): _____

Degree: ☐ B.S./B.A. ☐ Joint B.S./M.S. Date Expected: _____

II. CENTER PREFERENCES

Check up to three (3) NASA Centers for consideration. Selection will be based on applicant information, academic disciplines, and actual research positions available.

Summer 2001 (10-week session)	Fall 2001 (15-week session)
☐ *Ames Research Center*	☐ *Goddard Space Flight Center*
☐ *Glenn Research Center*	☐ *Johnson Space Center*
☐ *Jet Propulsion Laboratory*	☐ *Langley Research Center*
☐ *Kennedy Space Center*	
☐ *Marshall Space Flight Center*	
☐ *Stennis Space Center*	

If a match can not be made based on your circled choices above, would you consider other suitable Centers?

☐ NO

☐ YES, either session ☐ YES, Summer 2001 only ☐ YES, Fall 2001 only

III. REFERENCES

List the individuals that you have asked to submit a *NASA–USRP* Faculty Recommendation on your behalf. Also indicate whether the recommendation is enclosed or will be faxed/mailed directly by the individual.

1. _____ ☑ enclosed ☐ will fax/mail
2. _____ ☑ enclosed ☐ will fax/mail

IV. CERTIFICATION

I certify that I am a citizen of the United States and that all information contained in this NASA–USRP application package is accurate.

_____ _____

signature date

V. ADDITIONAL INFORMATION

Provide responses to the following using the space provided, or on a separate sheet of paper (1 page limit).

Describe any related activities that demonstrate your interest/commitment to your chosen discipline (e.g., memberships in related organizations, hobbies, special skills, honors, awards).

Describe any other experiences you think would enhance your application. (e.g., internships, camps, workshops, relevant work history).

What do you hope to gain from participating in the NASA–USRP and how might the research experience help you in your chosen discipline/future career?

NASA UNDERGRADUATE STUDENT RESEARCH PROGRAM (NASA-USRP)

Student Data

In order to determine the degree of applicant diversity, NASA requests the following information. Submission of this information is voluntary and will not be used for selection purposes.

Gender: ☑ Female ☐ Male

Date of Birth: _____/_____/_____
month day year

Are you the first family member to attend college? ☐ no ☑ yes

Ethnic Background:

- ☑ African American
- ☐ Asian
- ☐ Caucausian
- ☐ Hispanic
- ☐ Native American or Alaskan Native
- ☐ Pacific Islander
- ☐ Other, please specify _____

Individual with Disabilities? ☐ no ☑ yes

If yes, please specify: _____

_____

NASA UNDERGRADUATE STUDENT RESEARCH PROGRAM

Faculty Recommendation I

Name of Student Applicant: _____

The student named above is applying for a NASA research position during Summer or Fall 2001. We would appreciate your comments regarding the applicant. If you wish to elaborate or write a recommendation letter, please feel free to do so. Complete program information is posted at http://education.nasa.gov/usrp.

The recommendation may be returned directly to the student applicant for inclusion in their application package or you may opt to fax (757-865-7965) or mail the recommendation directly to: Virginia Space Grant Consortium, Attn: USRP Coordinator, 2713-D Magruder Blvd., Hampton, VA 23666. All applicant materials must be RECEIVED BY JANUARY 26, 2001 for consideration.

How long have you known the applicant? ☐ < 1 year ☐ 1–2 years ☐ 2–3 years ☐ > 3 years

Relationship to the applicant (e.g. professor, faculty advisor)? _____

Academic Qualifications

Achievement: _____

_____

_____

_____

Potential: _____

_____

_____

_____

Personal Attributes (e.g. self-initiative, reliability, etc.): _____

_____

_____

_____

Additional Comments: _____

_____

_____

_____

NASA UNDERGRADUATE STUDENT RESEARCH PROGRAM

Faculty Recommendation I (cont.)

Name of Student Applicant: _____

Research Qualifications

Experience/Skills: _____

_____

_____

_____

_____

Potential: _____

_____

_____

_____

_____

Additional Comments: _____

_____

_____

_____

For purposes of the NASA Undergraduate Student Research Program, I endorse the applicant as follows:

☐ Highly Recommended ☐ Recommended with some reservation

☐ Recommended ☐ Not Recommended

Printed Name: _____

College/University: _____

School/Department: _____

Title: _____

Signature: _____

NASA UNDERGRADUATE STUDENT RESEARCH PROGRAM

Faculty Recommendation II

Name of Student Applicant: _____

The student named above is applying for a NASA research position during Summer or Fall 2001. We would appreciate your comments regarding the applicant. If you wish to elaborate or write a recommendation letter, please feel free to do so. Complete program information is posted at http://education.nasa.gov/usrp.

The recommendation may be returned directly to the student applicant for inclusion in their application package or you may opt to fax (757-865-7965) or mail the recommendation directly to: Virginia Space Grant Consortium, Attn: USRP Coordinator, 2713-D Magruder Blvd., Hampton, VA 23666. All applicant materials must be RECEIVED BY JANUARY 26, 2001 for consideration.

How long have you known the applicant? ☐ < 1 year ☐ 1–2 years ☐ 2–3 years ☐ > 3 years

Relationship to the applicant (e.g. professor, faculty advisor)? _____

Academic Qualifications

Achievement: _____

_____

_____

_____

Potential: _____

_____

_____

_____

Personal Attributes (e.g. self-initiative, reliability, etc.): _____

_____

_____

_____

Additional Comments: _____

_____

_____

_____

NASA UNDERGRADUATE STUDENT RESEARCH PROGRAM

Faculty Recommendation II (cont.)

Name of Student Applicant: _____

Research Qualifications

Experience/Skills: _____

_____

_____

_____

_____

Potential: _____

_____

_____

_____

_____

Additional Comments: _____

_____

_____

_____

For purposes of the NASA Undergraduate Student Research Program, I endorse the applicant as follows:

☐ Highly Recommended ☐ Recommended with some reservation

☐ Recommended ☐ Not Recommended

Printed Name: _____

College/University: _____

School/Department: _____

Title: _____

Signature: _____